SECTION VII.—WEATHER AND DATA FOR THE MONTH.

THE WEATHER OF THE MONTH.

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PRESSURE.

The distribution of the mean atmospheric pressure over the United States and Canada, and the prevailing direction of the winds are graphically shown on Chart VII, while the average values for the month at the several stations, with the departures from normal, are shown in Tables I and III.

For the month as a whole the barometric pressure was high over all sections, except the coastal portion of the South Atlantic and east Gulf States, in the lower Ohio Valley, Arkansas, Oklahoma, southeastern Kansas, central Texas, and New Mexico, where the means were near or slightly below normal. The greatest plus departures appeared in the eastern Canadian Provinces and over the north Pacific coast.

The month opened with pressure near or slightly above normal in nearly all districts, except in the South Atlantic and east Gulf States and the Rocky Mountain region where relatively low pressure obtained. During the first and second decades moderately high pressure continued throughout most districts, although occasional rather well defined low areas crossed the country. During the third decade there were only slight daily variations and the pressure was generally near or slightly above normal, until near the close when pressures generally below the normal prevailed to the eastward of the Rocky Mountains, except in the extreme southeast, while in the Rocky Mountain region and to the westward they were slightly above normal.

The distribution of the highs and lows was generally favorable for southerly and southwesterly winds along the immediate Atlantic and Gulf coasts except the Florida Peninsula, southerly and southeasterly in the west Gulf and Southern Plains States, and northerly and northwesterly on the Pacific coast, except in the extreme north and south portions. Elsewhere variable winds prevailed.

TEMPERATURE.

At the beginning of June temperatures near the normal prevailed in all portions of the country, save in the extreme Northeast and in the Far West where cool weather obtained. About the middle of the first week, an area of decidedly cool weather overspread the northern Mountain region, the Great Plains, and upper Mississippi Valley, with minimum temperatures at points on the eastern slope of the Rocky Mountains at or near the freezing point. At the close of the week another cool area moved into the Missouri Valley and temperatures near the freezing point were reported from the Dakotas; there was a decided lowering of temperature also in the Lake region and over much of the Ohio Valley. The mean temperature for the week was below the normal over the principal cereal-producing sections of the country, while in the Gulf States, along the northern border from the Lake region eastward, and in the Far West, average temperatures were near or slightly above the normal.

Cool weather overspread the Far West, the upper Mississippi Valley and the districts to the eastward during the first few days of the second week, but there was a general warming up in the Plains States and to the east. By the middle of the week the weather had grown warmer in nearly all districts, although during the latter part it became cooler over the middle Mountain and Lake regions and the adjoining districts. Moderate summer temperatures continued in the East, South, and far West. At the close of the week moderately cool weather was the rule in the Mountain and Western districts, with some sharp falls in temperature in the Northwest, and readings were close to freezing in the upper Missouri Valley. The weekly mean temperature was below the normal over most of the central and northern districts, while over the Atlantic and Gulf States, and the immediate California coast, it was near or a few degrees above the normal.

Warm, sultry weather obtained at the beginning of the third week over eastern districts, but west of the Mississippi moderate temperatures were the rule. Toward the middle of the week cooler weather occurred in the northern districts, with light frosts at exposed points in the Lake Superior district. At the same time higher temperatures overspread the Middle West. During the latter part of the week the temperatures were generally high in the South, but cooler weather prevailed over northern districts, light frosts forming in the mountains of the far Northwest. At the close of the week cool weather prevailed over the interior districts, while moderate summer temperatures continued in the South and it remained cool in the far West. The week as a whole was decidedly cool from the Great Lakes westward to the Rocky Mountains. In the South, however, the averages were generally several degrees above the normal.

During the first few days of the fourth week cool weather prevailed generally over the interior of the country. In the far West moderate temperatures obtained until after the middle of the week, when considerably cooler weather overspread the Plateau region. In the meantime warmer, humid, weather set in over the Middle West and continued until the latter part of the week, and in the South it remained warm. By the close of the week cooler weather prevailed over most districts from the Plains region westward, and in the Missouri and upper Mississippi Valleys and the districts to the eastward. The mean temperature for the week was below the normal over most northern and central districts, being decidedly low in the Lake region, the Ohio Valley, and eastward to the Atlantic coast. Only in small districts in the South, along the immediate Pacific coast, and at a few points in the upper Missouri Valley were the averages equal to or above the normal.

PRECIPITATION.

During the first few days of the month rain fell over the more eastern districts, the far Northwest, and portions of the Rocky Mountain and Plateau regions, the falls being unusually heavy in portions of the Atlantic and east Gulf States and at points in Utah and Wyoming. As the first week advanced rains became more general in the Northwest and extended into the Mississippi and Ohio Valleys and the Lake and middle Plains regions, with rather copious amounts in portions of the Missouri Valley, Kansas, Oklahoma, and adjacent States. At the close of the week generally fair weather prevailed, except for local rains in the East, the South, and along the

northern border from Lake Superior to the Rocky Mountains. The week was cloudy and wet over the Great Plains region, copious rains occurring from northern Texas to the Dakotas and westward into the Mountain and plateau districts. It was wet also over much of the Middle and South Atlantic States, and moderate rains fell over most other districts east of the Rocky Mountains, save over the northeastern States, in central and southern Texas, and eastward over the middle Gulf States, where practically no rain occurred.

The first few days of the second week were mostly free from rain, except in the northern districts between the Rocky Mountains and the Great Lakes, where light showers prevailed at intervals. About the middle of the week heavy rains occurred in the Dakotas, Minnesota, and Montana, while moderate showers fell from the central portions of the middle Gulf States and northern Texas northeastward over most sections to the Atlantic. At the close of the week rains occurred over wide areas from the west Gulf States northeastward to the lower Lake region and at scattered points to the northwest, while in the Plains region and Southwest the weather was mostly clear. For the week as a whole generous amounts of rain fell in Montana, portions of the northern Plains States, and in the lower Missouri, lower Mississippi, and Ohio valleys, while light showers occurred in the cotton belt to the eastward of the Mississippi River, in the Atlantic Coast States, and in the region of the Great Lakes. In the coast and southwestern districts of Texas, the central and southern Plateau districts, the southern Rocky Mountain region and in California, no rain occurred.

The extensive rain area over the eastern districts at the beginning of the third week moved off the Atlantic coast during the following few days, with copious falls at points near the coast. About the middle of the week rain overspread the Missouri and upper Mississippi valleys and local heavy falls were reported from points in Kansas and surrounding districts, the amount at Concordia, Kans., in 48 hours exceeding 6 inches. Sharp rises occurred in many of the streams of Kansas, Missouri, and surrounding districts, and much damage resulted from flooding of crops, and otherwise. During the following few days the rain area advanced eastward to the Lake region and the Ohio Valley, and copious rains fell at many points in those regions. At the close of the week fair weather prevailed over much of the interior of the country. The rainfall for the week was heavy throughout most of the Plains region, and generous in the central and lower portions of the Ohio Valley, the region of the Great Lakes, and in most of the Atlantic Coast States. In the central and western portions of the cotton belt, except Oklahoma and northern Arkansas, but little rain occurred, and precipitation was absent over much of Texas and west of the Rocky Mountains, save for local showers in the northern districts.

No well-defined precipitation area crossed the country during the fourth week, and such precipitation as occurred resulted mostly from local thunderstorms. These were widely scattered, but considerable rain occurred each day with occasional heavy falls, especially about the middle of the week in the central Plains region, and portions of the Gulf States, lower Missouri and upper Mississippi valleys. At the close of the week scattered showers occurred in portions of the Southeast, the middle Plains region, and the upper Mississippi and lower Ohio valleys. The total fall for the week was generous in portions of the Gulf and Plains regions and the upper Mississippi Valley, and good rains occurred in portions of the South Atlantic States. Only moderate amounts fell in the Lake region, the Ohio Valley, and to the eastward, considerable areas in these districts receiving no appreciable amounts during the week. Practically no rain occurred over much of Texas and to the westward of the Rocky Mountains, except at a few scattered points in the more northern districts.

SUMMARY.

The marked features of the weather during June, 1915, were the persistent low temperatures and the copious rainfalls over the principal grain-growing and grass-growing regions. The close of June marked the sixth consecutive week with the mean temperature below the normal over most northern and central districts. Only in the South Atlantic and Gulf States and along the immediate Pacific coast were the mean temperatures generally above the normal. Rain fell over practically every portion of the country save extreme southwestern Texas, the southern portions of New Mexico and Arizona, western Nevada, and the greater part of California. The rainfall was heavy in portions of the Mississippi and Missouri Valleys, the central and southern Plains States, and the southern part of the Florida Peninsula.

LOCAL STORMS.

The following notes on severe storms have been extracted from reports of the State section directors:

Colorado.—A severe wind and hail storm visited Brent and Powers counties on June 29. Two people were killed and 22 seriously injured. In a section of country 4 miles wide and 15 miles long destruction was complete. Loss about $10,000.

Illinois.—A severe wind, hail, and electric storm occurred during the night of June 20–21 in Green, Calhoun, Jersey, Macoupin, Montgomery, Bond, White, and Wabash counties, doing much damage to stock, crops, and other property. Loss probably exceeded $200,000.

South Dakota.—A tornado swept over a narrow path in Hughes, Hyde, and Hand counties on the afternoon of June 16, doing many thousand dollars' worth of damage

and seriously injuring a number of people. Also on June 22 a storm with heavy rain, hail, and high wind destroyed all crops over a path 2 to 3 miles wide along the Elk Creek Valley, Meade County. Estimated loss, $100,000.

Kansas.—Tornadoes occurred as follows: June 3, about 6 p. m., in Wichita County, one person killed and eight injured, loss about $40,000. June 11, about 6.30 p. m., in Kiowa, Pratt, Stafford, and Pawnee counties, loss from $50,000 to $75,000. June 17, three tornadoes occurred, one in Pottawatomie County at 4 p. m., five persons killed and three injured, loss about $5,000; one in Coffee County at 5 p. m., loss about $40,000; and one in Bourbon County about 9 p. m., five persons injured, loss about $50,000. June 23, at 3 p. m., in Grant County, no damage reported. June 30, in Crawford County, loss about $2,000. Loss from hail throughout the State estimated at over $1,000,000. [See page 288 for losses by flood.]

TORNADO OF MAY 20, 1915, IN SPRINGFIELD, MO.

The following extracts from notes of W. B. Hare, observer, Springfield, Mo., of a tornado at that place, are in addition to the May, 1915, report:

A storm, which for a quarter of a mile attained tornado intensity, passed over the southeastern part of Springfield at about 6:25 p. m., on May 20, 1915. The path of the storm was about 1 mile long and 100 yards wide. There was considerable destruction of property, but no serious injury to persons or live stock. The worst damage occurred about 1 mile east of the city limits. A long pencil-like cloud seemed to extend almost to the earth with winds whirling all around it, and as it began to move rather slowly toward the northeast the wind increased in force and a terrific roaring sound was heard. Heavy rain fell and lightning with heavy thunder was almost incessant during the passage of the tornado.

Probably the most striking evidence of the wind force characteristic of tornadoes was at the farm of W. B. Sanford, where an immense oak tree weighing several tons was lifted from the ground and hurled a distance of 20 feet, tearing the wing of a house from its foundation. The greatest damage at this farm was the uprooting or twisting of 200 fine oak trees. The storm proceeded northeastward from the Sanford farm and uprooted many trees in another grove. One large tree 6½ feet in circumference was split in two from a point 3 or 4 feet above the ground almost to the limbs. It was as if a mighty wedge had been forced through the tree trunk.

Average and accumulated departures for June, 1915.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
	°F.	°F.	°F.	In.	In.	In.	0-10.		P. ct.	
New England	61.6	−2.0	+ 8.7	1.94	−1.20	−4.50	5.9	+0.7	77	−2
Middle Atlantic	68.1	−2.1	+ 6.0	3.96	+0.30	−1.30	5.3	+0.3	73	0
South Atlantic	75.1	−1.0	− 2.0	3.99	−1.00	−2.90	4.8	−0.2	76	−2
Florida Peninsula	81.2	+0.8	−11.5	6.50	−0.30	+3.80	5.0	−0.2	76	−3
East Gulf	79.4	+1.3	− 3.9	4.48	−0.10	−2.40	4.3	−0.4	72	−3
West Gulf	80.1	+1.1	− 5.0	2.95	−0.80	−0.10	4.3	0.0	74	−2
Ohio Valley and Tennessee	70.9	−2.3	− 1.6	3.72	−0.50	−5.40	5.7	−0.7	72	+2
Lower Lakes	63.7	−3.3	+ 0.3	2.74	−0.80	−4.30	4.8	−0.1	70	−1
Upper Lakes	58.4	−4.2	+ 9.0	3.33	+0.50	−2.30	5.8	+0.7	71	0
North Dakota	57.6	−6.0	+17.3	5.25	+1.60	+0.20	5.6	+0.2	71	+3
Upper Mississippi Valley	67.0	−4.0	+ 5.2	4.60	+0.20	+0.80	5.8	+0.8	74	+4
Missouri Valley	66.7	−4.2	+ 1.9	5.92	+1.60	+4.50	5.6	+0.7	74	+7
Northern slope	56.8	−5.3	+ 6.5	3.66	+1.40	+1.60	5.6	+0.8	66	+9
Middle slope	68.2	−3.6	− 4.0	4.73	+1.60	+5.20	5.4	+1.4	69	+9
Southern slope	78.0	+0.8	− 8.9	1.16	−1.50	+2.00	2.9	−0.9	56	−4
Southern Plateau	73.7	−0.9	−14.1	0.18	−0.20	+1.60	1.7	−0.3	31	+1
Middle Plateau	63.2	−2.5	− 2.6	0.54	+0.10	+0.20	2.6	−0.7	36	−1
Northern Plateau	61.6	−3.4	+10.5	0.71	−0.40	+0.20	4.0	−0.6	49	−3
North Pacific	58.2	+0.6	+15.3	0.67	−1.40	−6.10	4.9	−1.2	76	−1
Middle Pacific	62.3	−0.3	+ 4.1	0.01	−0.40	+4.70	1.7	−1.6	58	−4
South Pacific	66.8	+0.6	+ 7.6	T.	−0.10	+3.90	2.5	−0.8	66	0

Maximum wind velocities, June, 1915.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Mi./hr.				Mi./hr.	
Abilene, Tex.	25	54	sw.	New York, N. Y.	27	60	e.
Buffalo, N. Y.	7	52	sw.	Norfolk, Va.	2	55	n.
Do.	13	78	sw.	Oklahoma, Okla.	24	74	n.
Chattanooga, Tenn.	11	60	sw.	Do.	27	56	n.
Do.	14	64	s.	Pensacola, Fla.	25	54	nw.
Cheyenne, Wyo.	12	52	w.	Pierre, S. Dak.	27	57	n.
Columbus, Ohio	13	52	nw.	Pt. Reyes Light, Cal.	1	76	nw.
Dallas, Tex.	13	53	s.	Do.	2	50	nw.
Erie, Pa.	13	53	w.	Do.	9	69	nw.
Fort Smith, Ark.	22	59	nw.	Do.	10	81	nw.
Fort Worth, Tex.	13	50	se.	Do.	11	62	nw.
Do.	14	52	se.	Do.	15	59	nw.
Hannibal, Mo.	18	50	se.	Do.	18	57	nw.
Hatteras, N. C.	3	55	n.	Do.	19	62	nw.
Helena, Mont.	25	54	sw.	Do.	22	53	nw.
Kansas City, Mo.	30	50	nw.	Do.	24	51	nw.
Little Rock, Ark.	22	62	nw.	Do.	25	69	nw.
Louisville, Ky.	20	56	nw.	Do.	26	67	nw.
Mobile, Ala.	28	51	n.	St. Paul, Minn.	12	54	se.
Mt. Tamalpais, Cal.	1	66	nw.	Sandy Hook, N. J.	27	56	n.
Do.	2	57	nw.	Sioux City, Iowa	15	50	s.
Do.	3	53	n.	Valentine, Nebr.	12	50	nw.
Do.	9	63	nw.	Do.	27	54	sw.
Do.	10	88	nw.	Wichita, Kans.	11	58	se.
Do.	11	69	nw.	Do.	17	62	w.
Do.	15	63	nw.	Do.	27	52	n.
Do.	22	53	nw.				
Do.	23	80	nw.				
Do.	24	87	nw.				
Do.	25	74	nw.				